

CANINI
Serial No. 09/362,995

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Art Unit: 2612

REMARKS/ARGUMENTS

Reexamination of the captioned application is respectfully requested.

A. SUMMARY OF THIS AMENDMENT

By the current amendment, Applicant basically:

1. Amends claims 1, 9, and 10 (see Section B *infra*).
2. Editorially amends claims 3, 5, 6, and 14 to moot the claim objections (see enumerated paragraph 2 of the Office Action) and the rejections under 35 USC §112, second paragraph (see enumerated paragraph 3 of the Office Action).
3. Thanks the Examiner for the indication of allowable subject matter in claims 3, 4, 6, 7, 12-13, 15 and 16.
4. Thanks the Examiner for the allowance of claims 18 and 19.
5. Respectfully traverses all prior art rejections (see Section C *infra*).
6. Adds new claims 20-25 (see Section D *infra*)
7. Advises the Examiner of the simultaneous filing of a Petition to Extend.

B. AMENDMENTS TO CLAIMS 1, 9, AND 10

The wording of steps a) and d) of claim 9 and the wording of step d) of claim 10 have been amended for clarity. Note specifically that claim 10 has been amended because claim 10 is directed to avoid a possible condition of underexposure of the image and therefore the level of luminosity of the acquired image must be compared with a lower global threshold.

Step e) has been amended in each of independent claims 1, 9, and 10. Step e) essentially recites that the iterations of the claimed method (either the overexposure case of claim 1; the underexposure case of claim 10; or both the overexposure and underexposure cases of claim 9) are carried out for a prefixed number of times and

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independently from the result of the comparison performed in step d). In addition, as now amended step e) recites that the optimum value of the exposure time is selected as the highest (in the overexposure case of claim 1) or lowest (in the underexposure case of claim 10) value among those values set for the exposure time and which are such that the corresponding acquired images present a level of luminosity smaller (in the overexposure case of claim 1) or greater (in the underexposure case of claim 10) than the threshold level. Therefore, Applicant's claims provide, independently from the result of the comparison performed in step d), for selecting as optimum value the highest (in the overexposure case of claim 1) or lowest (in the underexposure case of claim 10) value among a plurality of values of the exposure time which are such that the corresponding acquired images present a level of luminosity smaller (in the overexposure case of claim 1) or greater (in the underexposure case of claim 10) than the threshold level.

C. PATENTABILITY OF THE CLAIMS

Claims 1, 2, 5, 8-11, 14 and 17 stand rejected under 35 USC §102(e) as being anticipated by U.S. Patent 5,585,942 to Kondo. All prior art rejections are respectfully traversed for at least the following reasons.

Applicant believes that there are some features of the Applicant's claims which have been disregarded or not properly considered by the Examiner. Consider, for example, the features of step e) of independent claims 9, 10, and 11. As indicated in the foregoing remarks of section B, Applicant's independent claims 9, 10, and 11 provide, independently from the result of the comparison performed in step d), for selecting as optimum value the highest (in the overexposure case of claim 1) or lowest (in the underexposure case of claim 10) value among a plurality of values of the exposure time which are such that the corresponding acquired images present a level of luminosity smaller (in the overexposure case of claim 1) or greater (in the underexposure case of claim 10) than the threshold level.

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For better understanding this aspect, please refer to Fig. 2: of the specification (reproduced below for convenience). Consider the case in which the global threshold level is representative of a condition of oversaturation (SAT) of the acquired image. According to the claimed method, a comparison between the actual level of luminosity of the acquired image and the threshold level (step d) is iteratively carried out for a certain number of times (in the example, four) to check whether the actual level of luminosity of the acquired image is greater than the threshold level. Thus, at the beginning of the method, the value of the exposure time of the sensor is set at 1/250 (first level of iteration), wherein 1/250 is one of the M prefixed values of the exposure time set. The comparison of step d) is then carried out. If the actual level of luminosity is found to be lower than the threshold level (condition of not saturation), the method provides for increasing the exposure time to 1/60 (second level of iteration), wherein 1/60 is another of the M prefixed values of the exposure time set.

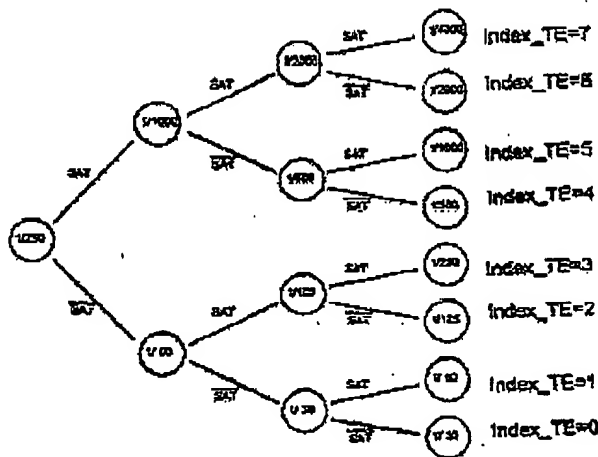


Fig. 2

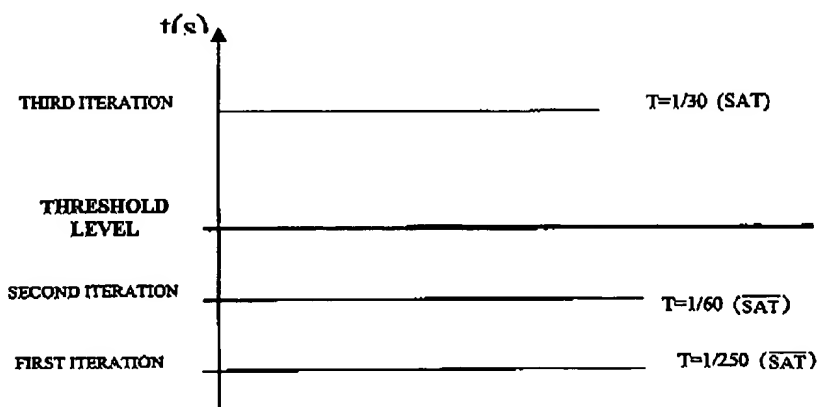
If again the actual level of luminosity is found to be lower than the threshold level (condition of not saturation), the method provides for still increasing the exposure time to

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1/30 (third level of iteration), wherein 1/30 is another of the M prefixed values of the exposure time set. If now the actual level of luminosity is found to be higher than the threshold level (condition of saturation), the optimum value of the exposure time is selected as being 1/60, which is the highest value from those values of the exposure time which are such that the corresponding acquired images present a level of luminosity smaller than the threshold level (this value of the exposure time being 1/250 and 1/60).

From the diagram below, it is clear that even if at the first and second iterations the condition of not saturation has been met, the iterations are not stopped but they are continued for the prefixed number of times to look for an optimum value of the exposure time, this optimum value being the highest value among those values which are such that the level of luminosity of the corresponding acquired images is lower than the threshold level.



Of course, the above example is applicable to the case in which the global threshold level is representative of a condition of undersaturation ($\overline{\text{SAT}}$) of the acquired image.

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In other words, Applicant's claimed method finds a value of the exposure time that not only meets a given condition - specifically, to be under the overexposure or over the underexposure threshold level - but also is an optimum exposure value. Accordingly, Applicant's method provides for performing a prefixed number of iterations independently from the fact that in the meantime a given condition (not saturation, in the overexposure case of claim 1 or not underexposure, in the underexposure case of claim 10) is met. When the prefixed number of iterations have been performed, an optimum value of the exposure time is selected as the highest (in the overexposure case of claim 1) or lowest (in the underexposure case of claim 10) value among those values which are such that the given condition has been met.

Kondo does not teach or suggest to search an optimum value of the exposure time. Rather, Kondo is limited just to find an exposure value that meets a given condition and therefore Kondo performs the iterations only until that condition is met.

Indeed, Kondo teaches that "when the system controller 14 determines on the basis of the comparison result from the comparator 12 that an integration value of the quantity of light incident on reference pixel becomes an appropriate value, the integration operation is stopped in response to a signal from the SSG 13, and a read-out operation is immediately started". See, e.g., column 10, lines 48-56. Kondo further teaches that "the integration value is compared with the appropriate exposure value set in the register 11 in advance. The system controller 14 determines whether the integration value reaches the appropriate exposure amount (S39). If YES in step S39 and when the integration time reaches the maximum integration time in the image pickup mode (S40), the SSG 13 outputs an exposure end signal to designate the start of reading-out of the memory 7 (S41)", see column 8, lines 30-38.

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From the above it is clear that Kondo teaches to perform the iterations on the basis of (that is, not "*independently of*", as recited in the claims of the Applicant's method) the result of the comparison between the integration value and the appropriate exposure value. Indeed, the iteration process is stopped when an appropriate value is reached, i.e., when the given condition is met.

In view of the above, Applicants' claimed method is novel and not obvious with respect to Kondo.

D. NEW CLAIMS 20 - 25

New claims 20 – 25 capitalize upon indications of claim allowability as indicated in the Office Action. In particular,

- New independent claim 20 incorporates the subject matter of previous claims 1, 2, and 3.
- New independent claim 21 incorporates the subject matter of previous claims 1 and 4.
- New independent claim 22 incorporates the subject matter of previous claims 1 and 7.
- New independent claim 23 incorporates the subject matter of previous claims 10, 11, and 12.
- New independent claim 24 incorporates the subject matter of previous claims 10 and 13.
- New independent claim 25 incorporates the subject matter of previous claims 10 and 16.

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E. MISCELLANEOUS

In view of the foregoing and other considerations, all claims are deemed in condition for allowance. A formal indication of allowability is earnestly solicited.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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